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OGILVY RENAULT LLP 1981 MCGILL COLLEGE AVENUE SUITE 1600 MONTREAL, QC H3A2Y3 CANADA			EXAMINER DANIELS, MATTHEW J	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/722,131

Applicant(s)

BASQUE ET AL.

Examiner

Matthew J. Daniels

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12,14-36,38-58,60-75 and 80-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12,14-36,38-58,60-75 and 80-82 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 March 2007 has been entered.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 12, 14-25** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In Claim 12, the new limitation to "the area being free of contact" (line 6) is new matter because the embodiments of this application, as disclosed in the drawings and original

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Claim 1, require a “contact jaw” and an “optical jaw”. There is no disclosure of an area being free of contact (from both jaws). Claims 14-25 are rejected by dependence on Claim 12.

3. **Claims 12, 14-25** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In Claim 12, lines 3 and 6 are contradictory because line 3 recites “bringing into contact” and line 6 recites “being free of contact”, and it is unclear what parts are contacting and free from contact. Additionally, it is noted that the instant specification discloses both physical and optical apertures used as the optical clamp. Optical apertures are disclosed, for example, on page 12, lines 1-12 where the window can be an aperture covered by an optical material. Clamps having physical apertures are disclosed, for example, in Figs. 6, 8A, 8B, 9, 10, 12, and 19. It is unclear how optical apertures could be used to bring two films into contact while leaving the area to be sealed/cut free of contact when the aperture has been covered by optical material. The optical material covering the aperture would also appear to contact the seal/cut area. Claims 14-25 are rejected by dependence on Claim 12.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Rejections of Claim 12 and dependent Claims 14-25 are withdrawn in view of the claim amendments and remarks on page 16 of the 14 March 2007 reply.

5. **Claims 26 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kendall (USPN 6207925) in view of Nettesheim (USPN 6387209). **As to Claim 26**, Kendall teaches a method of optically sealing and cutting flexible polymeric films with at least one laser beam having a shaped intensity profile (inherent), the method comprising:

shaping the intensity profile at least one laser beam intensity profile by using an optical device to provide the desired intensity profile (inherent in that laser beams are provided with an intensity profile) having two seal regions separated by a cut region (Fig. 1),

superposing and bringing into contact at least two of said films together (3:55-65), and exposing an area of the films using appropriate optical elements (Fig. 1), to said desired intensity profile for the purpose of obtaining in one exposure step two sealed regions where the films are sealed together separated by a cut region where the films have been cut and wherein by the time the cut region is performed, the sealed regions are sealed (Fig. 1, the sealing and cutting are simultaneous). Kendall provides a shaped intensity profile for the purposes of obtaining two sealed regions separated by a cut region, the sealed regions defining a portion of the seal/cut volume (Fig. 1, seal and cut lines in item 1).

Kendall is silent to the actuating of a support mechanism interconnecting two jaws of the optical clamp to allow closing of the clamp whereupon the films are pressed between the jaws.

However, Nettesheim teaches actuating a support mechanism interconnecting two jaws of an optical clamp to allow closing of the clamp whereupon the films are pressed between the jaws

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(Fig. 2, Fig. 3). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Nettesheim into that of Kendall because Kendall suggests that “any known means” (3:58-59) may be used to force the layers together, and Nettesheim provides one means, and because doing so would make Kendall’s method particularly suitable for sealing and severing partially transparent films (Nettesheim, 4:15-18). **As to Claim 31**, the laser beams are focused into small spots for the purpose of scanning along the volume of the films (2:45-67).

6. **Claim 27** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kendall (USPN 6207925) in view of Nettesheim (USPN 6387209), and further in view of Guckenberger (USPN 5630308). Kendall and Nettesheim teach the subject matter of Claim 26 above under 35 USC 103(a). **As to Claim 27**, Kendall appears to be silent to a Gaussian profile, however, Guckenberger teaches a Gaussian profile (12:31-41). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Guckenberger into that of Kendall because such profiles have a very high intensity and are therefore the most valuable for cutting and scoring (Guckenberger, 12:40-41).

7. **Claims 28 and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kendall (USPN 6207925) in view of Nettesheim (USPN 6387209), and further in view of Kendall and Nettesheim teach the subject matter of Claim 26 above under 35 USC 103(a). **As to Claims 28 and 29**, Kendall does not explicitly teach the sizes and filters of Claims 28 and 29, however, Kendall teaches that the degree of focus of the sealed and cut regions is a result

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effective variable (5:10-36), Kendall uses focusing lenses, and Kendall's focusing means would implicitly filter out some light (5:5-9).

8. **Claim 30** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kendall (USPN 6207925) in view of Nettesheim (USPN 6387209), and further in view of Osborne (USPN 4069080). Kendall and Nettesheim teach the subject matter of Claim 26 above under 35 USC 103(a). **As to Claim 30**, Kendall appears to be silent to the beam being shaped into a line wide enough to cover the whole width of the films to be sealed. However, Osborne teaches this aspect at 3:33-42. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Osborne into that of Kendall in order to save time (3:37-38).

9. **Claims 32 and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kendall (USPN 6207925) in view of Nettesheim (USPN 6387209), and further in view of Armitage (USPN 5260766). Kendall and Nettesheim teach the subject matter of Claim 26 above under 35 USC 103(a). **As to Claims 32 and 33**, Kendall clearly suggests monitoring the printed substrates with an optical detection assembly in the form of a photocell to scan and monitor the moving substrate (6:22-30), but Kendall appears to be silent to monitoring through an optical window of the clamp. However, Armitage teaches monitoring the sealing using an optical detector through an optical window of the clamp during cutting or sealing (2:1-41). The clamp of Armitage would be a shared optical element. It would have been prima facie obvious to one

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of ordinary skill in the art at the time of the invention to incorporate the method of Armitage into that of Kendall in order to detect faulty seals before they reach the consumer.

10. **Claims 34, 36, 38-48, and 51** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heydarpour (USPN 5911665) in view of Kendall (USPN 6207925) and Nettesheim (USPN 6387209). **As to Claim 34**, Heydarpour teaches a method for forming and filling pouches with liquid at high speed comprising:

- i) providing a vertical tube of polymeric filled being filled with liquid (12:1-15 and 9:26-50);
- ii) flattening and sealing (11:35-50)
- iv) providing a desire heat (5:47-51)
- v) obtaining two seals and severing the tube between the seals (11:44-12:28)

Heydarpour appears to be silent to the optical sealing clamps by actuating a support mechanism interconnecting two jaws to allow closing of the clamp (ii), exposure to laser beams (iii), and optimizing the profile (iv). However, these aspects would have been prima facie obvious over Nettesheim and Kendall who teach optical sealing clamps which flatten by actuating a support mechanism interconnecting two jaws of the optical clamp to allow closing and pressing of the films between the jaws (Nettesheim, Figs. 3 and 4) and laser beams having an optimized shape, intensity profile, and power (Kendall, 5:1-35), and simultaneously providing a severed region between two seals (Kendall, Fig. 1, seal and cut regions in Fig. 1). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the methods of Nettesheim and Kendall into that of Heydarpour in order to provide better control over the sealing operation (Kendall, 1:38-46) and because Nettesheim suggests the



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method for partially transparent films (4:15-20), which would have been desirable in Heydarpour's method. **As to Claim 36**, Nettesheim teaches the optical sealing clamp having two jaws which can be moved, both being contact and optical jaws wide enough to allow sealing or cutting of the whole width, and it would have been obvious to provide support means to provide the implicit clamping action of Nettesheim's method (Figs. 3-4). **As to Claim 38**, Nettesheim provides an optical window having an optical aperture (Fig. 4) which is transparent to light. **As to Claims 39 and 40**, Nettesheim's contact jaw has a profile to compress the walls of the tube together at the point of sealing or cutting, and opening the jaw would implicitly provide space for letting the tube or filled pouch pass through (Figs. 3-4). **As to Claims 41-45**, Nettesheim's reflectors re-inject any and all intensity that had not been absorbed by their reflective property of the clamps. By their curvature, these surfaces reflect the laser beam intensity an infinite number of times. **As to Claims 46 and 47**, Kendall provides a small spot which is scanned continuously to obtain an elongated seal (implicit in that the web is moving). **As to Claim 48**, Kendall uses a mirror (Item 8 in Fig. 1). **As to Claim 51**, Kendall teaches that the degree of focus of the sealed and cut regions is a result effective variable (5:10-36). Kendall also uses focusing lenses, and Kendall's focusing means would implicitly filter out some light (5:5-9).

11. **Claim 35** is rejected under 35 U.S.C. 103(a) as being unpatentable over Heydarpour (USPN 5911665) in view of Kendall (USPN 6207925) and Nettesheim (USPN 6387209), and further in view of Kovacs (USPN 4532753). Heydarpour, Kendall, and Nettesheim teach the subject matter of Claim 34 above under 35 USC 103(a). **As to Claim 35**, the cited references appear to be silent to the claimed limitation, however, it is conventional in the art to provide the

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polymeric film in a roll, draw it over a former to produce an overlapped edge, seal and continuously feed. See Kovacs' teaching in Fig. 6. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Kovacs into that of Heydarpour in order to use a flat sheet of film instead of a tubular film.

12. **Claims 49 and 52** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heydarpour (USPN 5911665) in view of Kendall (USPN 6207925) and Nettesheim (USPN 6387209), and further in view of Osborne (USPN 4069080). Heydarpour, Kendall, and Nettesheim teach the subject matter of Claim 34 above under 35 USC 103(a). **As to Claims 49 and 52**, the cited references appear to be silent to the beam being shaped into a line wide enough to cover the whole width of the films to be sealed. However, Osborne teaches this aspect at 3:33-42. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Osborne into that of Heydarpour in order to save time (3:37-38).

13. **Claim 50** is rejected under 35 U.S.C. 103(a) as being unpatentable over Heydarpour (USPN 5911665) in view of Kendall (USPN 6207925) and Nettesheim (USPN 6387209), and further in view of Guckenberger (USPN 5630308). Heydarpour, Kendall, and Nettesheim teach the subject matter of Claim 34 above under 35 USC 103(a). **As to Claim 50**, the cited references appear to be silent to a Gaussian profile, however, Guckenberger teaches a Gaussian profile (12:31-41). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Guckenberger into that of Heydarpour because

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such profiles have a very high intensity and are therefore the most valuable for cutting and scoring (Guckenberger, 12:40-41).

14. **Claim 53** is rejected under 35 U.S.C. 103(a) as being unpatentable over Heydarpour (USPN 5911665) in view of Kendall (USPN 6207925) and Nettesheim (USPN 6387209), and further in view of Armitage (USPN 5260766). Heydarpour, Kendall, and Nettesheim teach the subject matter of Claim 36 above under 35 USC 103(a). **As to Claim 53**, Kendall clearly suggests monitoring the printed substrates with an optical detection assembly in the form of a photocell to scan and monitor the moving substrate (6:22-30), but the cited references appear to be silent to monitoring through an optical window of the clamp. However, Armitage teaches monitoring the sealing using an optical detector through an optical window of the clamp during cutting or sealing (2:1-41). The clamp of Armitage would be a shared optical element. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Armitage into that of Heydarpour in order to detect faulty seals before they reach the consumer.

15. **Claims 54, 55, 58, 60-70, 73, 80, 81, and 82** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kendall (USPN 6207925) in view of Nettesheim (USPN 6387209). **As to Claim 54**, Kendall teaches a sealing and cutting method using at least one laser source comprising:

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- iii) exposing the section of the package to at least one laser beam intensity for a time exposure interval to heat in a controlled manner, the intensity being shaped to provide a particular intensity profile (5:1-40). An intensity profile is inherently provided.
- iv) providing a desired amount of heat to the section in order to perform a sealing and cutting operation (5:1-40)
- v) obtaining as a result of the sealing operation a seal across the section of the package, or two seals and a cut between the two sealed regions (Fig.1 and 5:1-40).

Kendall is silent to the steps (i) and (ii), and to the directing of a laser through an aperture of the clamp in (iii). However, these aspects would have been *prima facie* obvious over Nettesheim because it would have been obvious to fill the packages upon which Kendall is performing the sealing operation in order to avoid sealing empty packages, and because Nettesheim teaches (i) the optical sealing clamps (Figs. 3-4) having optical apertures which (ii) superpose and bringing into contact the inner walls of a section of the package by actuating two jaws of an optical sealing clamp to allow a closing of the clamp whereupon the films are pressed between the jaws. In the combined method, using the optical clamps of Nettesheim and the laser of Kendall would meet (iii) by directing the laser beam through an aperture of the clamp. Either Kendall or Nettesheim can be interpreted as suggesting a time exposure interval, because indefinite heating would obviously be undesirable if the package is ever to be used. It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Nettesheim into that of Kendall because Kendall suggests that "any known means" (3:58-59) may be used to force the layers together, and Nettesheim provides one means, and because doing so would make Kendall's method particularly suitable for sealing and

severing partially transparent films (Nettesheim, 4:15-18). **As to Claim 55**, Kendall clearly teaches two sheets (1:35-40 and elsewhere), and it would have been obvious to place product between the sheets for sealing. **As to Claim 58**, Nettesheim teaches the optical sealing clamp including two contact jaws, one being movable to allow opening and closing, allowing light to pass through, being wide enough to fit over the whole width, and support means to allow a controlled opening and closing (Figs. 3 and 4). Because the clamp of Nettesheim covers the sheet, it would provide the ability to seal and cut. **As to Claims 60-62**, Nettesheim's jaw has an optical aperture, it is transparent to light, it applies pressure, and its support means would leave a free space when the jaw is open to allow passage of the tube and product (Figs. 3 and 4). **As to Claims 63-67**, Nettesheim's jaws would provide total reflection of a beam by their reflective surface and particular shape, and this reflection would occur an infinite number of times or until the total beam was absorbed. **As to Claims 68 and 69**, Kendall clearly teaches and suggests focusing to a spot, scanning continuously in time, and control of the scanning speed to obtain a desirable seal (5:1-40). **As to Claim 70**, Kendall's item 8 in Fig. 1 is a mirror. **As to Claim 73**, Kendall teaches that the degree of focus of the sealed and cut regions is a result effective variable (5:10-36). Kendall also uses focusing lenses, and Kendall's focusing means would implicitly filter out some light (5:5-9). **As to Claim 80**, Kendall teaches superposing and bringing two sheets into contact, exposing an area corresponding to a sealing volume to at least one laser beam having a beam intensity to seal or cut the sheets. Kendall appears to be silent to the re-injecting and the actuating a support mechanism interconnecting two jaws of an optical clamp to allow closing and pressing of two films. However, Nettesheim teaches an optical clamp having optical apertures that would provide a reflective device and would re-inject intensity into the sealing

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region and improve the efficiency. Nettesheim also provides actuating a support mechanism interconnecting two jaws of an optical clamp to allow closing and pressing of two films (Figs. 3 and 4). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Nettesheim into that of Kendall because Kendall suggests that “any known means” (3:58-59) may be used to force the layers together, and Nettesheim provides one means, and because doing so would make Kendall’s method particularly suitable for sealing and severing partially transparent films (Nettesheim, 4:15-18).

**As to Claim 81**, Kendall teaches shaping the intensity profile of a laser beam by using an optical device to provide the desired profile which is inherently shaped (5:1-40), superposing and bringing into contact at least two sheets (Fig. 1), and exposing an area of the sheets to the laser to obtain two sealed regions separated by a cut region wherein the sealing and cutting are simultaneous (Fig. 1), defining a seal-cut-seal volume (Fig. 1). Kendall is silent to the actuating a support mechanism interconnecting two jaws of an optical clamp to allow a closing of the clamp with films pressed between and directing the desired intensity through an aperture of the clamp. However, Nettesheim provides an optical clamp that is actuated by a support mechanism interconnecting two jaws of an optical clamp whereupon the films are pressed between the jaws (Figs. 3 and 4). In the combined method, Nettesheim’s clamp and Kendall’s laser would provide the desired intensity through an aperture of the clamp. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Nettesheim into that of Kendall because Kendall suggests that “any known means” (3:58-59) may be used to force the layers together, and Nettesheim provides one means, and because doing so would make Kendall’s method particularly suitable for sealing and severing partially

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transparent films (Nettesheim, 4:15-18). **As to Claim 82**, Kendall teaches a sealing and cutting method using at least one laser source comprising:

- i) providing a partially formed package with its content being filled (obvious in that one would not seal an empty container)
- ii) superposing and bringing into contact the inner walls
- iii) exposing the section of the package to at least one laser beam intensity for a time exposure interval to heat in a controlled manner, the intensity being shaped to provide a particular intensity profile (5:1-40);
- iv) providing a desired amount of heat to the section in order to perform a sealing and cutting operation (5:1-40)
- v) obtaining as a result of the sealing operation a seal across the section of the package, or two seals and a cut (Fig.1 and 5:1-40).

Kendall is silent to optical sealing clamp and actuation of two jaws of the clamp of (ii) and the directing of a laser beam through an aperture of the clamp in (iii). However, these aspects would have been prima facie obvious over Nettesheim's teaching of optical sealing clamps (Figs. 3-4) which have optical apertures which transmit light, and which are actuated to press films between the jaws. In the combined method, Kendall's laser would pass through Nettesheim's clamp in the same manner as infrared light. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Nettesheim into that of Kendall because Kendall suggests that "any known means" (3:58-59) may be used to force the layers together, and Nettesheim provides one means, and because doing

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so would make Kendall's method particularly suitable for sealing and severing partially transparent films (Nettesheim, 4:15-18).

16. **Claims 56 and 57** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kendall (USPN 6207925) in view of Nettesheim (USPN 6387209) and Heydarpour (USPN 5911665). Kendall and Nettesheim teach the subject matter of Claim 54 above under 35 USC 103(a). **As to Claim 56 and 57**, Kendall appears to be silent to the tube and bags, however, Heydarpour teaches a method for forming and filling pouches or tubes with liquid (12:1-15 and 9:26-50). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Heydarpour into that of Kendall in order to provide a continuous and rapid container filling and sealing method and in order to avoid welding the vertical edges.

17. **Claims 71 and 74** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kendall (USPN 6207925) in view of Nettesheim (USPN 6387209), and further in view of Osborne (USPN 4069080). Kendall and Nettesheim teach the subject matter of Claim 54 above under 35 USC 103(a). **As to Claims 71 and 74**, the cited references appear to be silent to the beam being shaped into a line wide enough to cover the whole width of the films to be sealed. However, Osborne teaches this aspect at 3:33-42. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Osborne into that of Heydarpour in order to save time (3:37-38).



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18. **Claim 72** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kendall (USPN 6207925) in view of Nettesheim (USPN 6387209) and further in view of Guckenberger (USPN 5630308). Kendall and Nettesheim teach the subject matter of Claim 54 above under 35 USC 103(a). **As to Claim 72**, the cited references appear to be silent to a Gaussian profile, however, Guckenberger teaches a Gaussian profile (12:31-41). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Guckenberger into that of Kendall because such profiles have a very high intensity and are therefore the most valuable for cutting and scoring (Guckenberger, 12:40-41).

19. **Claim 75** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kendall (USPN 6207925) in view of Nettesheim (USPN 6387209) and further in view of Armitage (USPN 5260766). Kendall and Nettesheim teach the subject matter of Claim 58 above under 35 USC 103(a). **As to Claim 75**, Kendall clearly suggests monitoring the printed substrates with an optical detection assembly in the form of a photocell to scan and monitor the moving substrate (6:22-30), but the cited references appear to be silent to monitoring through an optical window of the clamp. However, Armitage teaches monitoring the sealing using an optical detector through an optical window of the clamp during cutting or sealing (2:1-41). The clamp of Armitage would be a shared optical element. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Armitage into that of Heydarpour in order to detect faulty seals before they reach the consumer.

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20. **Claims 12 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Osborne (USPN 4069080) in view of Nettesheim (USPN 6387209). **As to Claim 12**, Osborne teaches a method of sealing with at least one laser beam flexible polymeric films comprising superposing and bringing sheets into contact, and exposing an area to a laser beam for the purpose of sealing (4:7-19 and 3:30-42). Osborne is silent to the increasing the intensity by re-injecting and the actuation of the optical clamping mechanism. However, Nettesheim teaches the re-injecting and the actuation of an interconnecting two-jaw optical clamping mechanism (Figs. 3 and 4). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Nettesheim into that of Osborne in order to reduce the number of lasers required, and because Osborne suggest that energy should be applied from both sides to reduce the risk of burning. **As to Claim 20**, Osborne suggests that it is desirable to provide a wide beam which covers substantially the whole width to avoid the need to scan the beam (3:30-45).

21. **Claims 26 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Osborne (USPN 4069080) in view of Kendall (USPN 6207925) and Nettesheim (USPN 6387209). **As to Claim 26**, Osborne teaches a method for optically sealing by shaping a laser beam intensity profile using an optical device to provide a desired intensity profile, superposing and bringing the sheets into contact, and exposing an area of the films for the purpose of obtaining a seal (2:10-45 and 3:30-45). Osborne appears to be silent to the sealing and cutting at the same time and to the optical clamps. However, Kendall teaches that providing two seal regions separated by a cut region is known (Fig. 1). Nettesheim provides an actuated support

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mechanism interconnecting two jaws of an optical clamp allowing the closing of the clamp whereupon the films are pressed between the jaws (Figs. 3 and 4). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Kendall into that of Osborne in order to avoid a separate cutting operation (Kendall) and because Nettesheim suggests the method for partially transparent films (4:15-20), which would have been desirable in Osborne's method. **As to Claim 30**, Osborne suggests that it is desirable to provide a wide beam which covers substantially the whole width to avoid the need to scan the beam (3:30-45).

22. **Claim 54** is rejected under 35 U.S.C. 103(a) as being unpatentable over Heydarpour (USPN 5911665) in view of Kendall (USPN 6207925) and Nettesheim (USPN 6387209). **As to Claim 54**, Heydarpour teaches a method for sealing or sealing and cutting packages made with polymeric films comprising the steps of:

- i) providing a partially or completely formed package filled with its content;
- ii) superposing and bringing into contact the inner walls
- iii) heating in a controlled manner
- iv) providing a desired amount of heat
- v) obtaining a cut region between two seals.

Heydarpour appears to be silent to the lasers, and the optical clamps, and the desired profiles. However, these aspects would have been prima facie obvious over Nettesheim and Kendall who teach optical sealing clamps having optical apertures and being closed to press films between jaws (Nettesheim, Figs. 3 and 4) and laser beams having an optimized shape,

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profile, and power (Kendall, 5:1-35). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the methods of Nettesheim and Kendall into that of Heydarpour in order to provide better control over the sealing operation (Kendall, 1:38-46) and because Nettesheim suggests the method for partially transparent films (4:15-20), which would have been desirable in Heydarpour's method.

23. **Claims 71 and 74** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heydarpour (USPN 5911665) in view of Kendall (USPN 6207925) and Nettesheim (USPN 6387209), and further in view of Osborne (USPN 4069080). Heydarpour, Kendall, and Nettesheim teach the subject matter of Claim 54 above under 35 USC 103(a). **As to Claims 71 and 74**, Heydarpour, Kendall, and Nettesheim appear to be silent to the claimed beam profile. However, Osborne suggests that it is desirable to provide a wide beam which covers substantially the whole width to avoid the need to scan the beam (3:30-45). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Osborne into that of Heydarpour in order to quickly seal the entire width.

#### ***Response to Arguments***

24. Applicant's arguments filed 14 March 2007 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

(a) Kendall teaches away from Nettesheim because Kendall teaches that mechanical contact is not desirable.

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(b) Nettesheim teaches away from the use of a laser beam. The claimed clamp allows sealing through an aperture.

(c) Kendall's tensioning means are limited to several different means, and Nettesheim's means is not one of those recited.

(d) Claim 26 provides for a single laser beam creating the cutting and welding, and Kendall requires three beams.

(e) Other claims recite aspects of these claims and are believed to be patentable for the same reasons.

25. These arguments are not persuasive for the following reasons:

(a,b) The Examiner maintains that there is no teaching away from the combination of Kendall and Nettesheim. Kendall teaches that means are provided to bring the films into contact, and moreover that "This may be any known means," (3:58-59, emphasis added). Nettesheim provides a known means for bringing films together and for passing bonding radiation therethrough. Nettesheim's teachings are not interpreted as teaching away from the combination, as Nettesheim does not appear to specifically address lasers, but provides optical sealing clamps having an optical aperture.

With regard to the "aperture", it is noted that the instant specification discloses both physical and optical apertures used as the optical clamp. Optical apertures are disclosed, for example, on page 12, lines 1-12 where the window can be an aperture covered by an optical material. Clamps having physical apertures are disclosed, for example, in Figs. 6, 8A, 8B, 9, 10, 12, and 19. The arguments appear to assert that the claimed "aperture" is distinct from the clamp

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of Nettesheim. However, the instant claims are not limited only to physical apertures, but when read in light of the specification, include any aperture including optical apertures including windows (as described in Nettesheim).

(c) As asserted above, Kendall recites any known means, and Nettesheim provides known means. Even if Kendall fails to suggest the particular means of Nettesheim, it is not interpreted as teaching away from the combination.

(d) Careful consideration has been given to this limitation, but the rejection is maintained.

Kendall provides that a single laser beam (Fig. 1, item 4) creates the cutting and welding effect. It is noted that the laser beam is divided at item 3 in Fig. 1, but Applicant's disclosed invention also divides the laser beam in order to produce the cutting and sealing action. See Fig. 8B, where the point of the contact clamp (31') divides the laser beam into two portions, which would become reflected "beams". Thus, Kendall and the claimed invention both provide a single beam which produces both the cutting and shaping action.

Additionally, it is noted that Claim 26 recites "at least one laser beam" (line 4), thus the argument on page 17 of the remarks with respect to "a single beam" in Claim 26 are not commensurate with the scope of this claim because the claim is not limited to a single beam.

It is noted that the instant claims provide only a reflective jaw (See Claim 64, for example) having the capability to provide multiple reflections, but do not appear to recite the clamping structure found in instant Fig. 8B with greater specificity in a manner that would distinguish it from that of Nettesheim's reflective jaw.

(e) Other claims are rejected for the reasons set forth above.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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A.U. 1732

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